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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,341	12/09/2003	Brian Allan Floyd	YOR920030585US1	3541

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EXAMINER

NGUYEN, KHANH V

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/731,341

Applicant(s)

FLOYD, BRIAN ALLAN

Examiner

Khanh V. Nguyen

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-16 and 18-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-4, 6-16 and 18-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 12, 19, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear which "a series transmission line and shunt-stub" is intended. Note, [0031] of specification which stated "shunt-stub microstrip transmission line (T1-T7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 6-13, 15, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franca-Neto (6,806,777).

Regarding claims 1, 20, Franca-Neto discloses the claimed invention except a first stage is a common-base transistor. Franca-Neto (Fig. 1) discloses low-noise amplifier circuit comprising: a first amplifying stage is a common-gate transistor (M1); a second amplifying stage coupled to a first amplifying stage comprising a cascode

transistor pair (M2, M3); and a matching circuit including inductor (124) and resistor (122) in series with capacitor (126) which is connected to ground can be read as shunt capacitor/shunt-stub. However, the substitution of one well known type transistor for another would have been obvious in the absence of unexpected results, particularly as both bipolar transistor and field effect transistors are widely used in amplifier circuitries. And further inductor (124) can be read as a transmission line, since it is well known that transmission line and inductor can be used interchangeably.

Regarding claim 3, wherein matching (122, 124) is an inter-stage matching since it is coupled between input stage (M1) and output stage (M2, M3).

Regarding claims 6, 7, since transistor (M1) is replaced with a bipolar transistor which is known as silicon-based technology and silicon germanium technology is one known type of bipolar transistor technologies.

Regarding claim 8, wherein the amplifier is a low noise amplifier (LNA), see ABSTRACT.

Regarding claim 9, wherein the LNA of reference can be implemented in accordance with a millimeter-wave communication receiver, see BACKGROUND of the invention.

Regarding claim 10, wherein the LNA of reference is built and operable as claimed unilateral amplifier.

Regarding claim 11, wherein a current applied through Rfchoke (136) by bias voltage (bias3) can be adjusted by changing component value of element (136) which is within a level of ordinary skill in the art.

Regarding claims 12, 13, 18, 19, Franca-Neto discloses the claimed invention except a first stage is a **common-base transistor** (bipolar transistor). Franca-Neto (Fig. 1) discloses low-noise amplifier circuit comprising: an RF input can be a millimeter-wave signal which is considered an intended use of the invention, see BACKGROUND of the invention; a first amplifying stage is a **common-gate transistor** (M1) (field effect transistor); a second amplifying stage coupled to a first amplifying stage comprising a cascode transistor pair (M2, M3); and a matching circuit including inductor (124) and resistor (122) in series with capacitor (126) which is connected to ground can be read as shunt capacitor/shunt-stub. However, the substitution of one well known type transistor for another would have been obvious in the absence of unexpected results, particularly as both bipolar transistor and field effect transistors are widely used in amplifier circuitries. And further inductor (124) can be read as a transmission line, since it is well known that transmission line and inductor can be used interchangeably; wherein the bipolar transistor which is known as silicon-based technology and silicon germanium technology is one known type of bipolar transistor technologies.

Regarding claim 15, wherein matching (122, 124) is an inter-stage matching since it is coupled between input stage (M1) and output stage (M2, M3).

Claims 2, 4, 14, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franca-Neto (6,806,777) in view of Ebihara et al. (6,249,186).

Franca-Neto discloses the claimed invention (see above) except having input and output matching networks.

Ebihara et al. (20) disclose a multistage power amplifier comprises input and output matching networks (32, 33).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have added input and output matching networks, as taught by Ebihara et al. to France-Neto, since it is known in the art such an addition would have provide input and output matchings for respective first and second amplifying stages for reducing impedance mismatch.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (571) 272-1767. The examiner can normally be reached from 8:00 AM - 3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KHANH VAN NGUYEN
PRIMARY EXAMINER
Art Unit: 2817